STAT

AR-49

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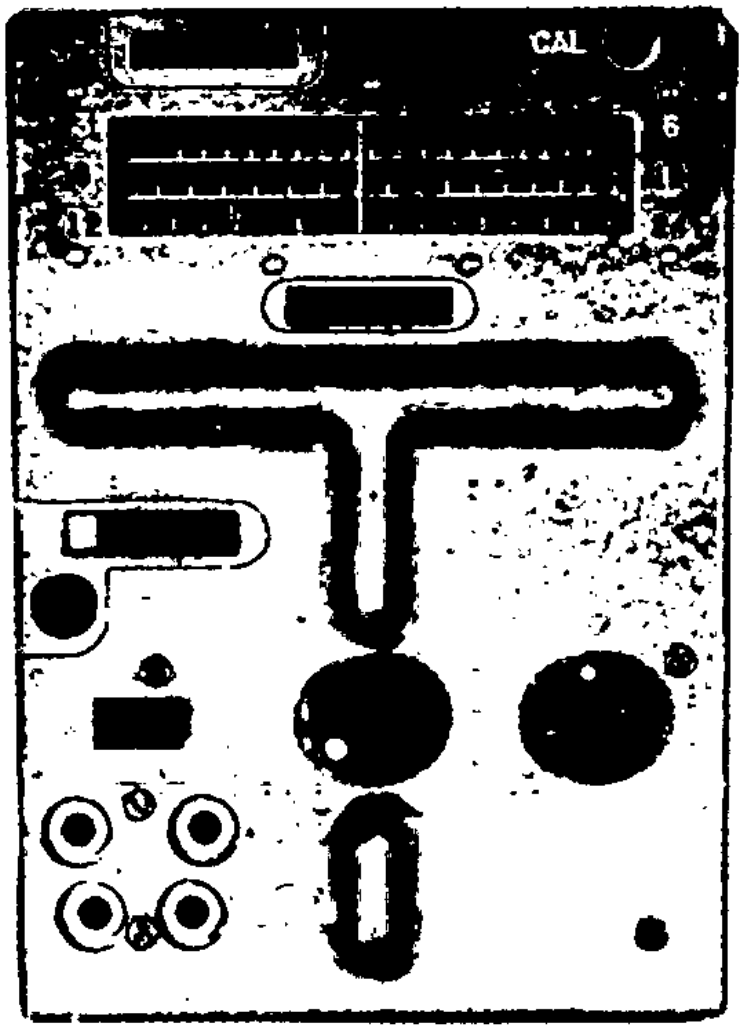


RR-49
RECEIVER
OPERATING INSTRUCTIONS

A. INTRODUCTION

The RR-49 is a miniature communications receiver that operates over the frequency range of 3 to 24 megacycles. It will receive CW, MCW, or voice signals. It is powered either by an internally contained 9-volt battery or by an external 12-volt battery supply.

B. DESCRIPTION OF CONTROLS AND SWITCHES

1. XTAL IN - OUT Switch (3)

The Crystal In and Out switch is used to permit either fixed or variable frequency reception. With the switch in the OUT position, the received frequency is variable and is determined by the setting of the tuning dial (8). With the switch in the IN position, the received frequency is fixed and is determined by the crystal that is inserted in the crystal socket (2).

2. Band Switch (6)

The Band switch is used to select any one of the receiver's three frequency bands. The switch is color coded to correspond with the colored markings of the band-limit frequencies printed at either end of the tuning dial (8). Band 1 (white) receives frequencies between 3 and 6 megacycles; Band 2 (red) receives frequencies between 6 and 12 megacycles; Band 3 (green) receives frequencies between 12 and 24 megacycles.

3. Tune Control (7)

The tune control is used to rapidly tune the receiver

to the desired frequency. It also moves the tuning dial (8) so that the frequency of the received signal may be read beneath the yellow hairline pointer (IØ).

4. Fine Tune Control (9)

The Fine Tune control is used for the same purpose as the Tune control (7) except that it tunes the receiver to the desired frequency at a less rapid rate and permits more accurate tuning.

5. CAL Switch (II)

The Calibrate switch is used to check the accuracy of the setting of the yellow hairline pointer (IØ). This check may be made at any whole-megacycle setting of the tuning dial (8).

6. PWR OFF - GAIN Control (I3)

The Power Off and Gain control is a dual-function control. It is used to turn the power to the receiver on or off and control the loudness of the signal in the earphone. The control is turned to the extreme counter-clockwise (OFF) position to remove power from the receiver. As the control is turned clockwise from the OFF position, the volume in the earphone increases and is maximum when the control is turned to the extreme clockwise position. This control should be left in the OFF position when the receiver is not in use.

7. OFF - BFO Control (I4)

The Off and Beat Frequency Oscillator control is a dual-function control. It is used to set the receiver for reception of voice, MCW or CW signals. When

the control is turned to the extreme counter-clockwise (OFF) position the receiver is set to receive voice or MCW signals. In any other position the receiver is set to receive CW signals.

C. PREPARATION FOR USE

1. Open the battery compartment lid by sliding the slide latch away from the edge of the receiver. Insert the 9-volt battery between the spring clips on the lid so the snap type battery terminals will fit into the terminals on the cover. Push the battery toward the terminal block until the terminals snap together. Close and latch the battery compartment lid.

If an external 12-volt power source is used, it should be connected to the three pin connector (12) on the side of the receiver using the adaptor cable provided. The internal battery need not be removed.

2. Insert the earphone in the earphone jack (1).

3. Connect the antenna by depressing the antenna post cap (4), inserting the wire in the antenna jack (5) and releasing the antenna post cap (4).

If an external 12-volt power source is being used and the adaptor cable provided is designed to permit the use of a single transmit/receive antenna, no antenna should be connected to the antenna jack (5).

D. CALIBRATION

To calibrate the receiver, proceed as follows:

a. Supply power source either externally or internally.

b. Insert earphone in earphone jack (1).

c. The XTAL IN/OUT switch (3) should be in the OUT position.

d. The OFF/BFO control (14) should be in the OFF position.

e. The band switch (6) should be set to the band that includes the desired receive frequency.

f. The PWR OFF/GAIN control (13) should be set to provide a comfortable listening level in the earphone.

g. Set the tuning dial (8) with the tune control (7) so that the whole-megacycle setting nearest to the desired receive frequency appears under the moveable hairline pointer (10).

h. Completely depress the CAL switch (11).

i. While keeping the CAL switch (11) depressed, adjust the fine tune control (9) until a null or zero-beat is attained. NOTE: The calibrate tone will appear at two points separated by approximately one-tenth of one megacycle. In all cases, the tone at the lower frequency is the correct point. This tone is also generally the louder of the two.

j. Release the CAL switch (11).

hairline pointer (10) until it is lined up directly over the whole-megacycle check point.

E. RECEPTION OF SIGNALS

1. Regardless of type of signal or mode of operation, the following initial steps should be performed.

a. Calibrate the receiver as outlined in paragraph D.

b. Connect an antenna to the receiver. This may be either a separate receiving antenna which is connected to the antenna jack (5) or a common transmit/receive antenna which is connected to the transmitter and routed to the receiver via the common power/antenna connection (12).

c. Tune the receiver by means of the tuning controls (7 & 9) so that the desired frequency setting on the dial (8) appears directly under the hairline pointer (10).

d. Rotate the PWR OFF/GAIN control (13) fully clockwise.

2. The following additional steps apply to a specific type of signal and mode of operation.

a. Voice or MCW

1. The OFF/BFO control should be in the OFF position.

2. The XTAL IN/ OUT switch (3) should be in the OUT position.

3. With the fine tune control (9), adjust the main tuning dial (8) until the desired signal is heard with the maximum volume and clarity.

4. Adjust the PWR OFF/GAIN control (13) setting to provide a comfortable listening level.

b. Voice or MCW, Crystal controlled

1. The OFF/BFO control (14) should be in the OFF position.

2. The XTAL IN/OUT switch (3) should be in the IN position.

3. Insert the appropriate crystal in the crystal socket (2).

4. Adjust the PWR OFF/GAIN control (13) setting to provide a comfortable listening level.

c. CW

1. The OFF/BFO control (14) should be set to the index mark which appears directly above the control.

2. The XTAL IN/OUT switch (3) should be in the OUT position.

3. With the fine tune control (9), adjust the main tuning dial (8) until the desired signal is heard. Continue the adjustment until the signal is zero-beated or nulled.

4. Adjust the OFF/BFO control (14) in either direction from the index mark until the signal is heard with the desired tone.

5. Adjust the PWR OFF/GAIN control (13) setting to provide a comfortable listening level.

d. CW, Crystal controlled

1. The XTAL IN/OUT switch (3) should be in the IN position.

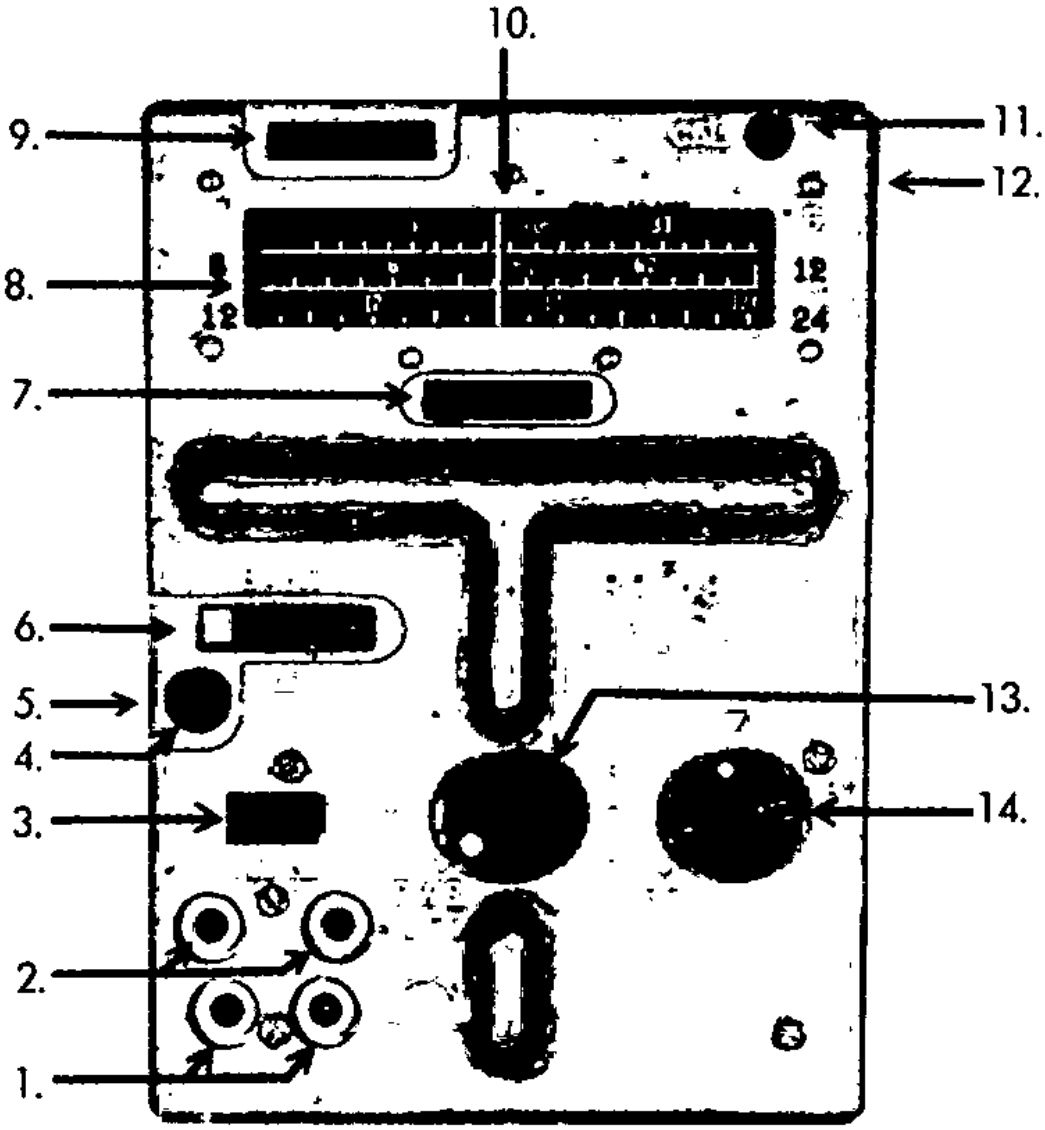
2. Insert the appropriate crystal in the crystal socket (2).

3. Adjust the OFF/BFO control (14) until the signal is heard with the desired tone.

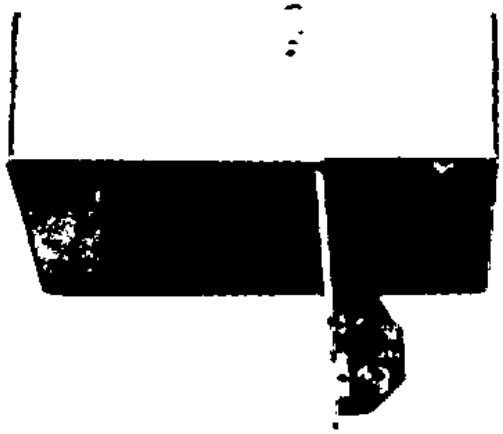
4. Adjust the PWR OFF/GAIN control (13) setting to provide a comfortable listening level.

F. MAINTENANCE

Due to the miniaturized construction of the receiver, no maintenance should be attempted. The receiver should be returned to base for exchange.



1. Earphone Jack
2. Crystal Jack
3. XTAL IN/OUT Switch
4. Antenna Post Cap
5. Antenna Jack (on side)
6. Band Switch
7. Tune Control
8. Tuning Dial
9. Fine Tune Control
10. Hairline Pointer
11. CAL Switch
12. Auxilliary Power & Antenna Connector (on side)
13. PWR OFF/GAIN Control
14. OFF/BFO Control



Battery Compartment

Auxilliary Power & Antenna Cable

Earphone

Battery

Accessories